

Meeting Notes from Rio Grande-Big Bend Region Partner Meeting

May 3, 2007

On May 3, 2007, individuals from several agencies, federal, state, local, and private, met at Big Bend National Park to discuss ways to improve and expand hydrologic services provided on the Rio Grande River. The staff at Big Bend National Park (BBNP) hosted the meeting in their Committee Room located at the park headquarters at Panther Junction. Agencies and companies represented were:

- National Weather Service-Southern Region Headquarters
- National Weather Service-West Gulf River Forecast Center
- National Weather Service-Weather Forecast Office, Midland, Texas
- National Weather Service-Weather Forecast Office, San Angelo, Texas
- United States Geological Society-San Angelo, Texas
- United States Geological Society-San Antonio, Texas
- National Park Service-Big Bend National Park, Texas
- Department of Homeland Security/Border Patrol-Presidio, Texas
- Department of Homeland Security/Border Patrol-Sector Headquarters-Marfa, Texas
- Texas Parks and Wildlife Department-Big Bend State Park-Lajitas, Texas
- City of Fort Stockton, Texas
- Reeves County (Texas) Emergency Management
- City of Lajitas-Water/Wastewater Department
- Trans-Pecos Water Trust
- Rio Grande Council of Governments (incl FEMA)
- Desert Sports (River Tours)-Terlingua/Study Butte, Texas
- Big Bend River Tours- Terlingua/Study Butte, Texas

The meeting started at 9AM with a welcome from Vidal Davila, Chief, Science and Resource Management, Big Bend National Park. As he concluded his welcome the Midland WFO presented BBNP with their Fifty Year Cooperative Observer Award. Vidal and Jeff Bennett, Physical Scientist, BBNP, accepted the award on behalf of all the park employees and volunteers who have contributed to the service of daily observations for the National Weather Service.



L to R: Jeff Bennett, NPS; Vidal Davila, NPS; Ben Weiger, NWS SRH, Susan Griffin, NWS MAF

The meeting continued with the Midland Weather Forecast Office (WFO) representative, Lora Mueller, explaining the operations and responsibilities of the Midland WFO. Lora described the meteorological and hydrological duties of the office and informed the group that the local WFO's are a 24/7/365 operation. Emphasis was placed on the local hydrology program and some of the more frequently used definitions and equipment types.

Bob Corby, Development and Operations Hydrologist, from the West Gulf River Forecast Center (WGRFC), provided a presentation detailing the WGRFC's operations. The presentation addressed the hydrologic model used to provide river forecasts along the Rio Grande and its tributaries. Bob explained some of the limitations with obtaining precipitation estimates in the Big Bend Region and Northern Mexico and other hydrologic model limitations experienced with the Rio Grande. Bob emphasized the significant contribution from the Rio Conchos drainage in Mexico. The Rio Conchos is mainly regulated by Mexican reservoirs, the most downstream being Luis Leon. Unexpected releases from Luis Leon Reservoir can severely impact flows through the Big Bend area. It is important to receive timely information from Mexico since Rio Grande forecasts depend largely on the flows coming from the Rio Conchos. Currently, the reservoirs on the Rio Conchos are near capacity with little remaining storage. There is an increased risk of flooding as we go into the tropical season this summer.

Due to a minor emergency, the International Boundary and Water Commission (IBWC) representatives were not able to attend the meeting. A brief description of what they do was provided by Lora Mueller. She explained that the IBWC is primarily concerned with water accounting and maintaining the current river channel per the 1944 treaty between the US and Mexico.

Cary Carman from the San Angelo USGS field office took the floor to give a brief overview of the USGS hydrology operations including streamgauge equipment and the challenges that the Rio Grande presents. Cary also described the USGS cooperative program.



USGS Presentation by Cary Carmen, San Angelo

Jason Johnson, Service Hydrologist from WFO San Angelo, presented many of the current hydrology products that the National Weather Service WFOs and WGRFC produce and where to find the information. A handout with links to many of these services was provided to all attendees as an internet connection was not available to show these links in real-time. Jason then opened the floor briefly for discussion on service needs and expansion along the Rio Grande. The discussion lasted about 20 minutes at which time the meeting

broke for lunch and everyone traveled the 20 minute drive from Panther Junction up to the Chisos Basin Lodge Restaurant for lunch.

Upon returning to the meeting facilities after lunch, the Service Expansion discussion was re-opened.

General comments and open discussion topics:

- No Radar Data, limited River Gage and Reservoir release data out of Mexico makes forecasting the Rio Grande more difficult than other river systems that exist within the US boundaries.
 - The group recognized the effort that IBWC puts into communicating with Mexico.
 - Timely and accurate information from Mexico is important to all partners along the Rio Grande-Big Bend Region.
 - Given that the reservoirs on the Rio Conchos are near capacity with little remaining storage, timely information is critical since there is an increased risk of flooding as we go into the tropical season this summer.
- No automated gage (just a staff gage) at Lajitas makes forecasting more difficult.
 - This location has some very fast responding contributions.
 - Poor rating curve
- Automated Gages at Castolon and Heath Canyon would be helpful.
 - USGS in partnership with TCEQ is in the process of installing automated gages at Castolon and Rio Grande village. These will have the full range of data (their main interested is monitoring water quality.) Funding is guaranteed at least through FY08.
 - On average the cost for the installation of a gage is \$15,000 to \$20,000 and then the annual Operations & Maintenance is around \$15,000/year...but would be a little more for the Rio Grande due to its remoteness.
- It was noted that the data on the IBWC and the NWS sites were not consistent...especially at low flows. At times were off by over 100 CFS.
 - Likely a problem on the NWS side...WGRFC agreed to be more vigilant on updating the lower end of the rating curves.
 - Believe that IBWC updates the rating Curves twice per month....need to coordinate better on when a rating is shifted/modified. Perhaps an automatic notification could be explored.
- Detailed discussions on the Lajitas Gage.
 - Staff gage is currently on a bend...not good site...the bend will impact the accuracy of the readings.
 - It was moved from the previous site due to silting.
 - Another viable location for Lajitas is at "Ronnie's old place" which is now TX Parks and Wildlife land.

- It is approx 1 mile upstream from the current site. In the discussion everyone thought that there were not any major inflow locations in between this proposed site and the current location.
- Illegal crossing issues from Mexico
 - Border patrol indicated that they have 70 known vehicle crossings.
 - Need to find out at what flow do these crossings become impassable.
 - Some options would be to use HEC-RAS to model these locations
 - Perhaps the Corps of Engineers or the IBWC have already done this.
 - May not need to identify each one. Could we possibly group some crossings that are similar (especially in the shape, slope and slitting load of the channel)?
 - They do have a map of all of these sites...question have they identified which are their higher risk areas...perhaps we could start with those first for study and flow guidance.
 - DHS may be able to help with funding of new gages if we can show how the information will help in the planning and response operations.
- Discussion on other funding options for river and precipitation gages.
 - TX legislature is currently looking at restructuring the sporting Good tax that would allow a higher percentage of the tax to go Texas parks.
 - Link that describes the bill. http://www.texascoa.org/news/ar_040205.php
 - Direct link to the Bill. <http://www.capitol.state.tx.us/tlodocs/79R/billtext/html/HB01292I.htm>
 - NPS indicated that in order for them to be a funding partner the gages must be on NPS land. Could possible explore some co-op agreements but these would be very limited in flexibility.
 - Private funding – Daniel Hostettler owner of the Lajitas Resort may be interested. (Mac Morrow said that he would approach Mr. Hostettler.)
 - Everyone is encouraged to send emails and find out who else might be able to help with River and Precipitation gage funding...either private or public funds.
- Additional precipitation to help fill in the void of radar precipitation estimates.
 - Additional precipitation equipment is currently being considered for the Texas State Park. (They are working with NRCS)
 - Need to ensure that anywhere we have a river gage we also have a rain gage.
 - Further partner with Community Collaborative Rain, Hail and Snow Network (COCORAHS) <http://www.cocorahs.org/>
- Mexican information.
 - There is a real-time gage on the Rio Conchos (however do not believe that it is available on the web...it is decoded internally within the IBWC and NWS.)

- The group realizes the limited data from Mexico and the importance of working through the IBWC to get information.
- Communication methods – While cell phones are great...coverage is patchy at best. No NOAA Weather Radio coverage in this part of the country. So Internet really is the best means.
- Comments from the rafting industry.
 - They work off of flow not stage.
 - Floatability levels for the Rio Grande are published in guide books. But they are very outdated. Local operators are working to get these updated.
 - Current operations...no river activity if the flow is less than 50 cfs.
 - In these situations the rafting industry offers other excursions to visitors.
- Daily forecasts requested from the NWS for PRDT2 and Rio Grande Village when the gage is operating. Will reevaluate other gages for daily forecast points in the future. (Want flow values...would stage be useful??)
- Recreation Forecast
 - WGRFC is currently working with the TX Parks and Wildlife to revamp the Recreation Forecast. (A history...it is generated weekly every Wednesday and provides expected stream flows for the weekend. Link to current forecast <http://www.srh.noaa.gov/wgrfc/RecForecast.php?pil=FWRRVSFWR>)
 - Parks and Wildlife have identified the “floatability categories” the NWS provides the forecast flow information.
 - Is this something that the rafting industry would be interested in?? Mixed comments for now.

Group voted that this meeting was very productive and would like to make an annual collaborative meeting. Proposal was to continue to host it at the National Park facility if possible. May seemed to be a good time of year for most parties involved. Need to invite the Corps of Engineers for 08...Anyone else???

- Presentations will be available on a NWS website. Further info will be provided.

At 4PM CDT, the meeting adjourned with all discussions at an appropriate ending point. Many folks that were not local to the area participated in a tour of the area. The tour left from Panther Junction and got to the Cottonwood Campground right outside Historic Castolon at about 5PM CDT. We stopped first at the NWS staff gages located outside the campground entrance and then proceeded into the campground to look at the siting of the NPS/ Texas Commission on Environmental Quality (TCEQ) automated gage that is currently not functioning properly. The USGS is currently partnering with both the NPS and TCEQ to resolve the problems and get the gage working properly.



Series of staff gages at Cottonwood Campground-BBNP

From the gage sites at Cottonwood Campground, the group headed towards Santa Elena Canyon. The roads along this stretch were closed to the public due to flooding over the prior weekend. Water levels were low enough to allow vehicles to go through escorted by NPS staff. After arriving at the canyon, Jeff Bennett pointed out the high water mark that is painted on the exterior restroom (outhouse style) wall from the October 1990 floods. He also indicated how high the water level was (just under the 1990 watermark) in the 2003 floods through the area when Terlingua Creek was running with 40,000 cfs into the Rio Grande.



High Watermark-Santa Elena Canyon (background)



L to R: Ben Weiger, Pat Vesper, Bob Corby, Lora Mueller, Jeff Bennett, Diane Cooper, Susan Griffin, Jason Johnson

After leaving Santa Elena Canyon, the group headed towards the entrance to Old Maverick Road. Park Service equipment had not yet been able to get to the gravel road and re-grade it after the weekend heavy rains and severe weather. Therefore, all non-4x4, high-clearance vehicles were left at the gate, and everyone carpooled in the larger vehicles. We continued down Old Maverick Road to the Terlingua Creek automated gage at Terlingua Abajo. The USGS helped demonstrate how the cableways were used by them and the IBWC to take manual readings of the river. After taking many sunset photos of the distant Santa Elena Canyon, the gage house and the Creek, we departed Terlingua Abajo to head back to Lajitas for the night.